

Contents

<i>Dedication</i>	<i>v</i>
<i>Preface</i>	<i>vii</i>
<i>Contributors</i>	<i>xi</i>
1 De Novo Sequencing of Peptides from Tandem Mass Spectra and Applications in Proteogenomics.....	1
<i>Savas Takan and Jens Allmer</i>	
2 Genome Annotation	21
<i>Abhishek Kumar</i>	
3 Comprehensive Peptide Mapping Is Crucial for Proteogenomics and Proteomics	39
<i>Jens Allmer</i>	
4 A Review of Protein Inference	53
<i>Julian Uszkoreit, Katrin Marcus, and Martin Eisenacher</i>	
5 From Gene to Whole Cell: Modeling, Visualization, and Analysis	65
<i>Bjorn Sommer and Sabrina Jaeger-Honz</i>	
6 Introduction to Integrated Proteogenomic Pipeline for Dealing with Pathogenic Missense SNPs	93
<i>Alisha Parveen and Abhishek Kumar</i>	
7 Discovering Novel Proteoforms Using Proteogenomic Workflows Within the Galaxy Bioinformatics Platform	109
<i>Praveen Kumar, James E. Johnson, Thomas McGowan, Matthew C. Chambers, Mohammad Heydarian, Subina Mehta, Caleb Easterly, Timothy J. Griffin, and Pratik D. Jagtap</i>	
8 Comparative Proteomics of Bacteria Under Stress Conditions	129
<i>Zarrin Basharat, Leonard J. Foster, Sidra Abbas, and Azra Yasmin</i>	
9 The Functional Comparison of Eukaryotic Proteomes: Implications for Choosing an Appropriate Model Organism to Probe Human Biology	163
<i>Hiren Karathia, Sridhar Hannenhalli, and Rui Alves</i>	
10 Sample Preparation for Proteogenomics of Aquatic Invertebrates	181
<i>Christine Almunia, Duarte Gouveia, and Jean Armengaud</i>	
11 Proteogenomics for Non-model Ocean-Derived Fungi	197
<i>Abhishek Kumar</i>	
12 Deciphering Cancer Complexity: Integrative Proteogenomics and Proteomics Approaches for Biomarker Discovery	211
<i>Rashmi Rao, Mohd Gulfishan, Min-Sik Kim, and Manoj Kumar Kashyap</i>	
13 Biomarker Discovery via N-Glycoproteomics	239
<i>Rajesh Kumar and Abhishek Kumar</i>	

14	Proteogenomic Approaches for Diseasesome Studies.....	253
	<i>Medhavi Pokhriyal, Nidhi Shukla, Tiratha Raj Singh,</i> <i>and Prashanth Suravajhala</i>	
15	Comparative Proteogenomic Approaches for Mapping the Global Proteome of the Unsequenced <i>Leishmania</i> Vector <i>Phlebotomus papatasi</i>	265
	<i>Milind S. Patole, Jyoti Sharma, and Harsh Pawar</i>	
16	A Proteogenomic Approach for the Identification of Virulence Factors in <i>Leishmania</i> Parasites	279
	<i>Nupur S. Munjal, Gourav Dey, K. T. Shreya Parthasarathi,</i> <i>Kshipra Chauhan, Kalpana Pai, Milind S. Patole,</i> <i>Harsh Pawar, and Jyoti Sharma</i>	
17	Moving Toward Metaproteogenomics: A Computational Perspective on Analyzing Microbial Samples via Proteogenomics	297
	<i>Franziska Singer, Mathias Kuhring, Bernhard T. Renard,</i> <i>and Thilo Muth</i>	
18	Evaluation of Eukaryotic mRNA Coding Potential.....	319
	<i>Alex V. Kochetov</i>	
	<i>Index</i>	333